

## Brief history of burnout

The coining of the term 'burnout' in a clinical sense is typically attributed (1) to Freudenberger in 1974 (2), where he described it as particularly pertinent to caring professionals. More than forty years later, burnout is still conceptualised as uniquely affecting those in emotionally demanding professional roles (3). However, one of the first documented reports of workplace burnout more generally shows it occurring in individuals without occupational caring responsibilities (4). In 1971, three years before Freudenberger's description (2), US air traffic controllers were commonly reporting "vocational 'burn out,' a form of exhaustion, which is manifested in a decline in quantity and quality of work production" (4). There are a number of important, and overlooked, parallels between burnout in air traffic controllers and physicians reporting burnout today that can inform our current approaches to addressing this phenomenon.

During the 1960s and 1970s, air traffic controllers reported poor training environments, inadequate equipment, rapidly changing shift patterns, long shifts without breaks, fatigue, monotony due to automation, and challenges arising from human-machine interfaces (5). A huge increase in air traffic, with a small rise in the number of controllers, created conditions which were perceived as pushing beyond the limits of safety (4, 5). After a series of fatal mid-air collisions linked to human error, the Federal Aviation Administration commissioned a prospective cohort study in 1973 from Boston University School of Medicine (6). This landmark study is one of the first investigations into workplace burnout, following 416 individuals over three years and resulting in a report of over 650 pages (6). The findings identified burnout, increased incidence of hypertension, and signs that controllers developed psychiatric problems over the course of the study. However, the report and its findings have been largely forgotten.

One of the most striking and counterintuitive aspects of the findings was that workers who went on to develop burnout showed *greater psychological health* earlier in the study (6), scoring higher on positive mood states, reporting less anxiety and less alcohol consumption than the comparison group. The report concluded that those who suffered fears about burnout were actually the more competent individuals and that burnout concerns, once set in motion, tended to become a self-fulfilling prophecy. Burnout was not simply a failure of personal resilience as the majority of air traffic controllers had experience of military service (6) and so had encountered extremely challenging conditions.

The study's findings (6) can be used to question the logic underpinning recent trends in medical education and training, which outline the development of personal resilience as part of 'professional excellence' (7). The air traffic control study (6) indicates those who strive hardest to meet internal and external professional ideals may paradoxically increase their risk of burnout symptoms. This might represent 'pathological altruism' (8) whereby individuals sincerely engage in acts designed to be altruistic but may end up unintentionally harming themselves or those they are intending to help. This is consistent with Oakley's argument that there might be negative consequences (such as burnout) for the unrelenting demand for altruism in healthcare professionals (8).

The history of burnout demonstrates important links with increased work complexity. This contrasts with modern narratives that physician burnout mainly results from the emotional demands of work (3). Changes made in aviation settings draw on approaches from human factors in complex systems (9). These acknowledge that individual, group/team, organisational, regulatory and environmental factors collectively and *interactively* influence performance and outcomes (10). In aviation settings, crew resource management (CRM) provides non-technical skills training for dealing with complexity (10, 11). CRM has evolved into *team training systems* (11) in situational awareness, decision-making, teamwork, communication and problem-solving (10), reinforcing its suitability to healthcare settings where 'team burnout' is associated with lower patient satisfaction with care (12). In aviation, proper implementation of critical incident stress management programmes include preventative teaching and training on 'normal reactions' to chronic and acute work stress (cognitive, emotional, physical, and behavioural reactions) (9, 13). To be successfully adopted, interventions from aviation settings will require adaptation to the existing professional culture in medicine (9). Once such interventions are embedded, they then become the very mechanisms by which professional culture can be changed (9).

Resource constraints, ever-increasing demands and complexity in medicine are irreversibly changing professional work in medicine. A major systematic review demonstrates that organisational- and individual-level interventions are both effective at reducing physician burnout (14). Learning lessons from aviation, the integration of human factors approaches to improve systems in medicine should include interventions for managing work complexity at the individual- (13), team- (11), and organisational-level (10). Medical workloads need to be reconfigured or redesigned in line with human cognitive, emotional and physical limitations, with accompanying organisation-wide training and management support. Significant and active participation from the professional workforce (15) will be key to achieving success in the development of healthier and safer medical workplaces.

## References

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